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ART 34 AMDT

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We claim:-

1. A process for the preparation of isocyanates by reacting primary amines with phosgene in a reactor, the reaction discharge being present in the form of a suspension which contains the isocyanate to be prepared, as a liquid, and carbamyl chlorides as a solid, wherein the suspension is worked up in a film evaporator.
2. A process as claimed in claim 1, wherein the film evaporator is an apparatus which has no moving parts.
3. A process as claimed in claim 1 or 2, wherein the film evaporator is a falling-film evaporator.
4. A process as claimed in any of claims 1 to 3, wherein a distillation column is connected downstream of the film evaporator.
5. A process as claimed in any of claims 1 to 4, wherein the suspension is worked up in two or more film evaporators which are arranged in series and operate at different pressure levels.
6. A process as claimed in claim 5, wherein the first film evaporator operates at from 0.5 to 25 bar and the second film evaporator has a pressure which is from 0.01 to 1 bar lower than the pressure of the first film evaporator.
7. A process as claimed in any of claims 1 to 6, wherein the carbamyl chloride is present in the suspension in an amount of from 0.01 to 35% by weight, based on the weight of the isocyanate to be prepared.
8. A process as claimed in any of claims 1 to 7, wherein the suspension contains amine hydrochlorides and ureas as additional solid components.
9. A production plant for the production of isocyanates by reacting primary amines with phosgene, comprising a reactor in which the reaction of primary amines with phosgene takes place and

Fig.

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at least one film evaporator to which the reaction discharge of the reactor, which is present in the form of a suspension which contains the isocyanate to be prepared, as a liquid, and carbamyl chlorides as a solid, is fed.

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10. The use of film evaporators for working up reaction discharges from phosgenation reactors, the reaction discharges being present in the form of a suspension which contains the isocyanate to be prepared, as a liquid, and carbamyl chlorides as a solid.

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